are abundant upon leaf scars and twigs. The life-history is summed up as follows:

The spores, scattered profusely over the limbs, germinate as soon as enough rain has fallen to wet them up thoroughly, usually in December or January. Spores lying on the green bark of new shoots penetrate the tissue and cause the characteristic spotting. Spores lying about the bud scales produce a mycelium which penetrates and kills outright both the bud and quite an area of surrounding bark, the spot extending from one-fourth to one inch in length. On the spots spore pustules are developed.

The fungus was cultivated in beef agar, in ordinary agar, and on sterilized peach twigs. The colonies are black with distinct zonal arrangement of conidia. No indication of an ascigerous stage was found.—F. L. STEVENS.

Fungus diseases of sugar cane.—BUTLER [17] has given an account of the fungi attacking sugar cane in Bengal. The most serious disease seems to be caused by *Colletotrichum falcatum* Went., which causes a rot of the stalks that spreads from the base upward. In the early stages of the disease the fungus greatly reduces the sugar-content of the cane. With the disappearance of the cane sugar there is a simultaneous increase of glucose. This is attributed to the inverting action of the fungus, and by proper flask experiments it was shown that the fungus has the power of inverting cane sugar. All parts of the cane are attacked by the fungus. On the stem it is often accompanied by a form of Melanconium (*Trichosphaeria Sacchari*), which was once regarded as the cause of the most destructive cane disease of the West Indies, namely the "rind disease." BUTLER believes, however, that the Melanconium is only an accompanying fungus and that *Colletotrichum falcatum* is possibly the cause of the famous "rind disease."

A number of other fungi are more briefly described. *Ustilago Sacchari* Rabenh. transforms the growing axis into a long spore sac. *Diplodia cacaoicola* (P. Henn.), which was originally found on *Theobroma cacao*, is said also to attack the stems of cane. *Cytospora Sacchari* Butl. is described as a new species also found on the stems of cane. *Thielaviopsis ethaceticus* Went. is the cause of the "pine-apple" disease of the young sets, while *Sphaeronema adiposum* Butl. somewhat resembles the latter in its effects. The most serious leaf diseases are the brown leaf spot caused by *Cercospora longipes* Butl., described as a new species, and the well-known ring-spot, found everywhere on cane leaves in the tropics and caused by *Leptosphaeria Sacchari* Br. & H.—H. HASSELBRING.

Cyanogenesis in plants.—TREUB returns to a discussion of the origin and distribution of hydrocyanic acid.[18] Incidentally he adds in one of his tables to the list of plants in which HCN has been found (as given by GRESHOFF at the York meeting of the B. A. A. S.) six genera and sixteen species. HCN as a rule, in hot countries at least, disappears from the leaves before their fall, the contrary

[17] BUTLER, E. J., Fungus diseases of sugar cane in Bengal. Mem. Dept. Agric. India Bot. **1**: no. 3. pp. 53. *pls. 11.* 1906.

[18] TREUB, M., Nouvelles recherches sur la rôle de l'acide cyanhydrique dans les plantes vertes, II. Ann. Jard. Bot. Buitenzorg **21**: 79–106. *pls. 1, 2.* 1907.

case of Sambucus (GUIGNARD) and Indigofera (TREUB) being exceptions. The amount diminishes regularly with age in most cases, though there are not wanting examples where the amount remains nearly constant until late in the life of the leaf, when it suddenly disappears. Since distillation after maceration yields more HCN than direct distillation, it is evident that a part at least, and as experiments indicate most or all, of the HCN exists in the form of a glucoside which is split up by an enzyme. No matter how quickly the killing and distillation is carried on, the glucoside is hydrolyzed, so that the enzyme acts with "astonishing rapidity." Some study was made of the enzymes concerned, but these must be worked out later. That HCN is a reserve is shown by the fact that in plants put into obscurity sufficient to preclude photosynthesis, HCN diminishes after the third day; and when the same plants are brought out into the light again it increases. Further, the maximum content of HCN occurs at midday. Light is influential only because it provides for the making of glucose, which is necessary to the formation of the glucoside.

In a second short paper TREUB[19] disposes of the contention that the rôle of HCN is that of protection against animals.—C. R. B.

Taxonomic notes.—C. WARNSTORF (Hedwigia **47**:76–112. 1907), in a series of descriptions of new species of Sphagnum, includes 4 from the United States: *S. missouricum* (Missouri), *S. Bushii* and *S. alabamae* (Alabama), and *S. Evansii* (New Jersey).—LEROY ABRAMS (Torreya **7**:217–219. *fig. 1.* 1907) has described a new maple (*A. bernardinum*) from the San Bernardino Mountains of California.—W. A. SETCHELL (Jour. Mycol. **13**:236–241. *pl. 107.* 1907) has published new species of hypogaeous fungi (Secotiaceae) under Secotium and Elasmomyces.—SV. MURBECK (Lunds Univ. Arsskrift II. **2**: no. 14. pp. 30. *pls. 2.* 1907) has studied the *vesicarius* group of Rumex, recognizing 3 forms under *R. vesicarius* L.; separating *R. planivalvis*, *R. simpliciflorus* (3 forms), *R. vesceritensis*, and *R. cyprius* as new species; and characterizing *R. roseus* L.—W. TRELEASE (Ann. Rep. Mo. Bot. Garden **18**:225–230. *pls. 12–17.* 1907) has described 2 new species and 2 new varieties of Yucca; also (*idem* 231–256. *pls. 18–34*) has published an account of *Agave macroacantha* and allied Euagaves, disentangling an extensive synonomy.—J. R. DRUMMOND (*idem* 25–75. *pls. 1–4*) has published an account of the literature of Furcraea with a synopsis of the known species, recognizing 10 as valid and 6 more as possibly valid but imperfectly known.— A. MAUBLANC (Bull. Trim. Soc. Mycol. France **23**:146–149. *figs. 7.* 1907) has described a new genus (*Ceratopycnidium*) of Spheropsidaceae from the Congo.—A. A. HELLER (Muhlenbergia **3**:133–134. 1907) has reestablished *Chloropyron* Behr with 4 species, heretofore referred to Cordylanthus or Adenostegia. All the species belong to salt marshes near the Pacific coast or to saline soil in the interior.—J. M. C.

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[19] TREUB, M., Notice sur "l'effêt protecteur" assigné à l'acide cyanhydrique des plantes. *Ibid.* 197-114. *pls. 3, 4.* 1907.